confirmed by DONOVAN[11] by observations on the same species of Euphorbia in Madras. LAFONT[12] now follows with a full account of the organism. The parasite, which was originally discovered in the latex of *Euphorbia pilulifera*, occurs also in the two other species *E. thymifolia* and *E. hypericifolia*. A search of the latex of some 50 other species of plants from various families failed to reveal similar organisms. About one-third of the *Euphorbia* plants from different stations were found to be infected. The number of parasites in different plants varies greatly. The infected plants show the effects of malnutrition, and finally drop their leaves and die. The protozoans are elongated, flattened, and somewhat undulate. They do not, however, possess the undulating membrane of trypanosomes, and are therefore placed in the genus *Leptomonas*, as *L. Davidi*. The apex is provided with one cilium, which originates in a blepharoplast. A large nucleus is situated near the center of the body. Division, which was observed in hanging drop cultures, takes place by longitudinal fission, preceded by a thickening of the body of the organism. Various forms, perhaps indicating different stages in the development of the organism, were observed. The simplest are spherical, nucleated masses of protoplasm, which soon form a cilium. It is possible that two parasites exist here. Injection of the parasites into the blood of small animals produced no infection, although some of the animals died from unknown causes.—H. HASSELBRING.

Diseases of celery.—KLEBAHN[13] has added to his numerous excellent contributions of life histories of *Fungi imperfecti* an account of two diseases of celery occurring in the truck gardens on the lowlands surrounding Hamburg. The first is the leaf-spot disease caused by *Septoria Apii* (Briosi and Cav.) Rostr., also known as *S. Petroselini* Desm. var. *Apii*, and as *Phlyctaena Magnusiana* (Allechr.) Bres. The fungus attacks the leaves, stems, and fruits of the celery plants, and forms pycnidia on all of these organs. In following out the manner in which the fungus lives through the winter, the author encountered no other fruiting stages. The fungus is carried over from year to year by means of spores which persist both in the pycnidia on the plant remnants left in the fields, and in the pycnidia on the seeds. With spores from both sources the author was able to produce infections on young plants with ease.

The second disease is a scab of the roots, which, although it has been reported from several places, has never been critically studied. The disease is shown to be due to a species of *Phoma*, for which the author here first uses the name *Ph. apiicola*, unfortunately without giving a technical description of the fungus.

---

[11] DONOVAN, C., Kala-azar in Madras, especially with regard to its connection with the dog and the bug (*Conarrhinus*). Lancet **177**:1495–1496. 1909.

[12] LAFONT, A., Sur le présence d'un *Leptomonas*, parasite de la classe des Flagellés dans le latex de trois Euphorbiacées. Ann. Inst. Pasteur **24**:205–219. *figs.* 7. 1910.

[13] KLEBAHN, H., Die Krankheiten des Selleries. Zeitschr. Pflanzenkrank. **20**: 1–40. *pls.* 2. *figs.* 14. 1910.

The pycnidia occur on the diseased roots, and more abundantly on the lower part of the petioles and on the fruit, but rarely on the leaves. Cultures were obtained from hyphae invading the sound tissue of the roots and from spores. The colonies from both sources were similar, and many infection experiments with mycelium from both sources on sound roots were successful. The action of this species of *Phoma* in producing a scab and rotting of celery tubers is a case analogous to the well-known root rot of sugar beets caused by another species of the same genus, *Ph. Betae*.—H. HASSELBRING.

Treatment for smuts.—The usual methods of treating seed-grain for the prevention of smuts have not proved applicable in the case of the loose smuts of wheat and barley, since these fungi persist through the winter, not by means of spores adhering to the surface of the grain, but by means of a dormant mycelium in the interior of the seed. APPEL,[14] following out the suggestion made by JENSEN at the time of the publication of his hot water treatment to use a preliminary treatment with cold water for seed infected with these smuts, has worked out a more definite method founded on an experimental basis. APPEL assumes that, like the spores of smuts, the dormant mycelium will start into growth more readily than the infected seed, and that the active mycelium will be killed at temperatures which do not injure the seed. The experiments substantiate this belief. It is found that grain infected with *Ustilago tritici* or *U. nuda* can be treated successfully by being soaked for six hours at 20–30° C., and by being treated subsequently with hot water at 50–54° C., or by hot air at a corresponding temperature.—H. HASSELBRING.

Dehiscence of anthers.—HANNIG [15] takes up what apparently he regards as a real difference between STEINBRINCK'S cohesion theory and SCHNEIDER'S *Schrumpfungstheorie* for the explanation of the dehiscence of anthers. To the reviewer the two theories differ more in the degree of analysis than anything else, as he believes that this phenomenon must be in the last analysis found dependent upon the tensile strength of water. However, the author has done a real service in showing how the dehiscence is a genuine cohesion consequence. He has accomplished this by artificially causing dehiscence through the effect of dehydrating solutions. He has shown that dehiscence will occur in a saturated atmosphere if anthers are exposed to light which generates enough heat in the tissues to reduce the vapor tension sufficiently to set up tension in the water contained in the membranes. BURCK'S notion that the nectaries withdraw water from the membranes and hence cause dehiscence in a saturated atmosphere was not confirmed.—RAYMOND H. POND.

---

[14] APPEL, OTTO, Theorie und Praxis der Bekämpfung von *Ustilago tritici* und *Ustilago nuda*. Ber. Deutsch. Bot. Gesell. **27**:606–610. 1910.

[15] HANNIG, E., Ueber den Offnungsmechanismus der Antheren. Jahrb. Wiss. Bot. **47**:186–218. 1909.